FIG. 1

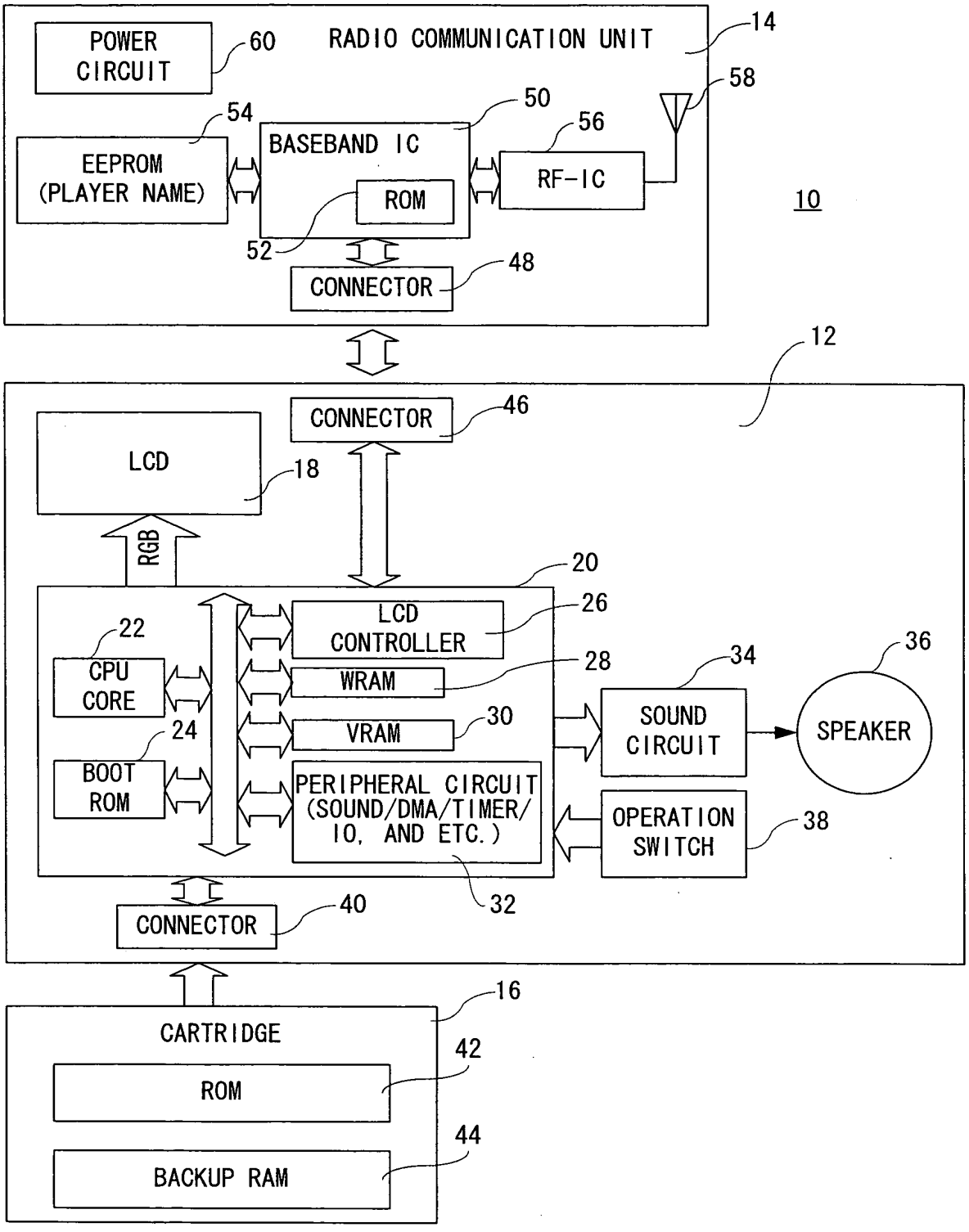

POWER CIRCUIT
60
RADIO COMMUNICATION UNIT
14
58
54
50
56
EEPROM (PLAYER NAME)
BASEBAND IC
ROM
RF-IC
10
52
CONNECTOR
48
12
CONNECTOR
46
LCD
18
RGB
20
LCD CONTROLLER
26
22
CPU CORE
WRAM
28
34
36
SOUND CIRCUIT
SPEAKER
24
BOOT ROM
VRAM
30
PERIPHERAL CIRCUIT (SOUND/DMA/TIMER/ IO, AND ETC.)
OPERATION SWITCH
38
32
CONNECTOR
40
16
CARTRIDGE
42
ROM
44
BACKUP RAM

FIG. 2

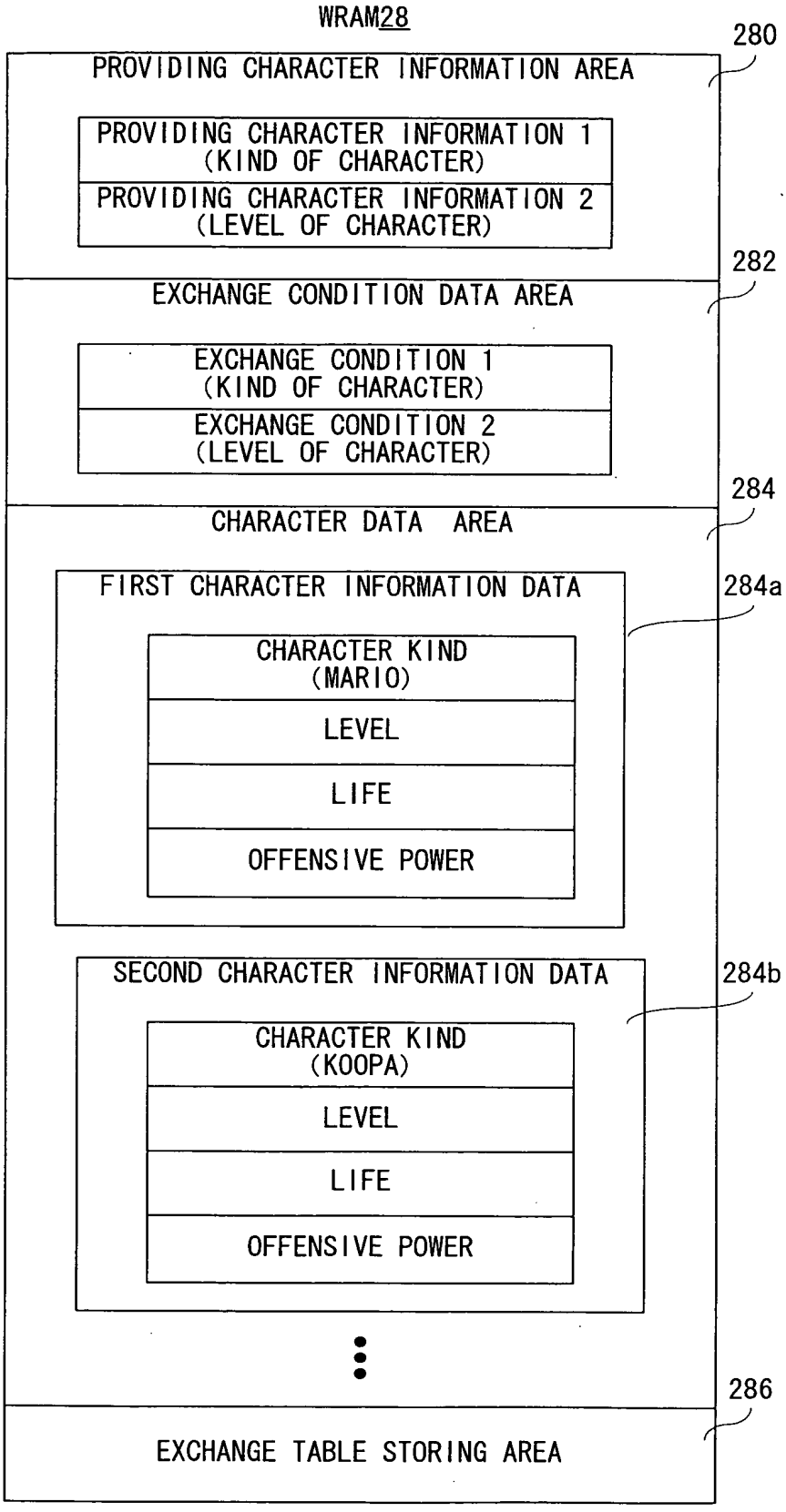

WRAM28
280
PROVIDING CHARACTER INFORMATION AREA
PROVIDING CHARACTER INFORMATION 1 (KIND OF CHARACTER)
PROVIDING CHARACTER INFORMATION 2 (LEVEL OF CHARACTER)
282
EXCHANGE CONDITION DATA AREA
EXCHANGE CONDITION 1 (KIND OF CHARACTER)
EXCHANGE CONDITION 2 (LEVEL OF CHARACTER)
284
CHARACTER DATA AREA
FIRST CHARACTER INFORMATION DATA
284a
CHARACTER KIND (MARIO)
LEVEL
LIFE
OFFENSIVE POWER
SECOND CHARACTER INFORMATION DATA
284b
CHARACTER KIND (KOOPA)
LEVEL
LIFE
OFFENSIVE POWER
286
EXCHANGE TABLE STORING AREA

FIG. 3

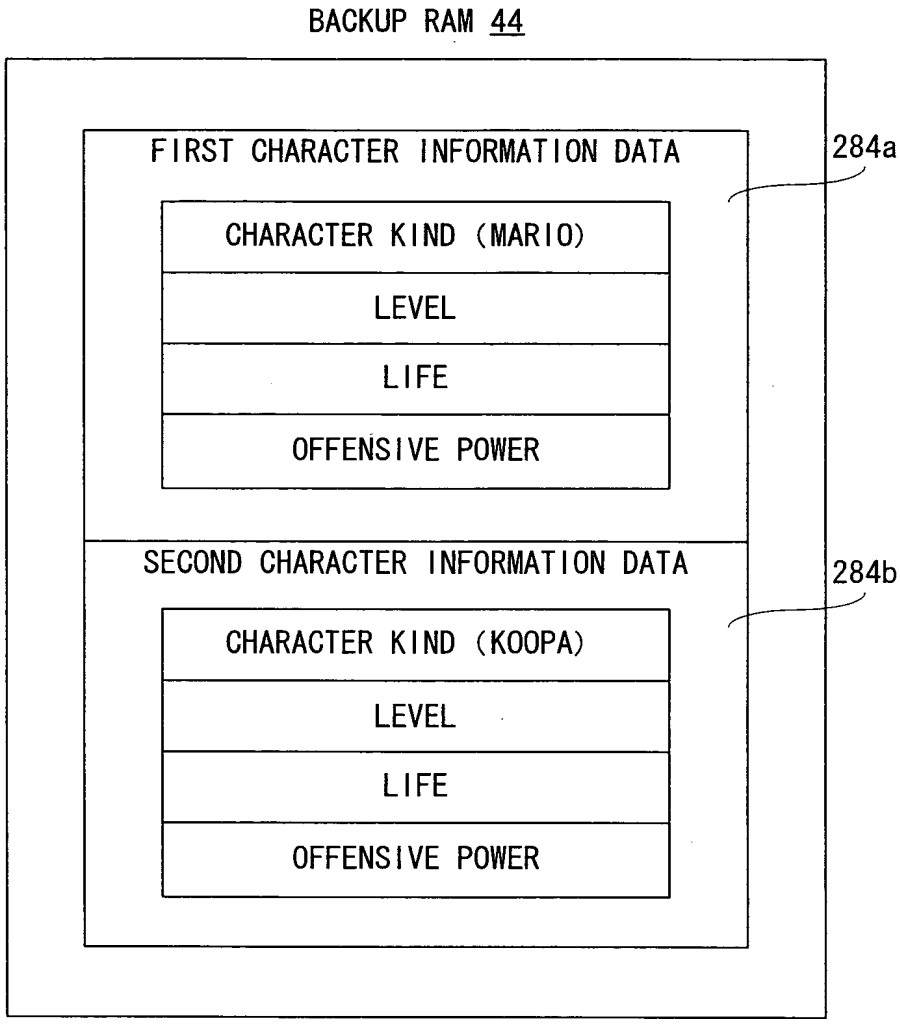

BACKUP RAM 44
FIRST CHARACTER INFORMATION DATA
284a
CHARACTER KIND (MARIO)
LEVEL
LIFE
OFFENSIVE POWER
SECOND CHARACTER INFORMATION DATA
284b
CHARACTER KIND (KOOPA)
LEVEL
LIFE
OFFENSIVE POWER

FIG. 4

EXCHANGE TABLE

NUMBER	EXCHANGE STARTING CONDITION	EXCHANGE ENDING CONDITION	PROVIDING CHARACTER		REQUIRED CHARACTER	
			KIND	LEVEL	KIND	LEVEL
1	OBTAIN SPECIFIC ITEM	—	MARIO	5	KOOPA	5
2	DEFEAT DRAGON	—	AT PLAYER' S DISCRETION	ANY LEVEL	AT PLAYER' S DISCRETION	AT PLAYER' S DISCRETION
3	SAVE VILLAGE CHARACTER	—	LUIGI	7 OR MORE	KOOPA	AT PLAYER' S DISCRETION
4	APRIL 10	APRIL 15	KOOPA	10 OR MORE	AT PLAYER' S DISCRETION	MORE THAN LEVEL OF PROVIDING CHARACTER
5	15:00	16:00	PEACH	ANY LEVEL	AT PLAYER' S DISCRETION	SAME AS THE LEVEL OF PROVIDING CHARACTER

FIG. 5

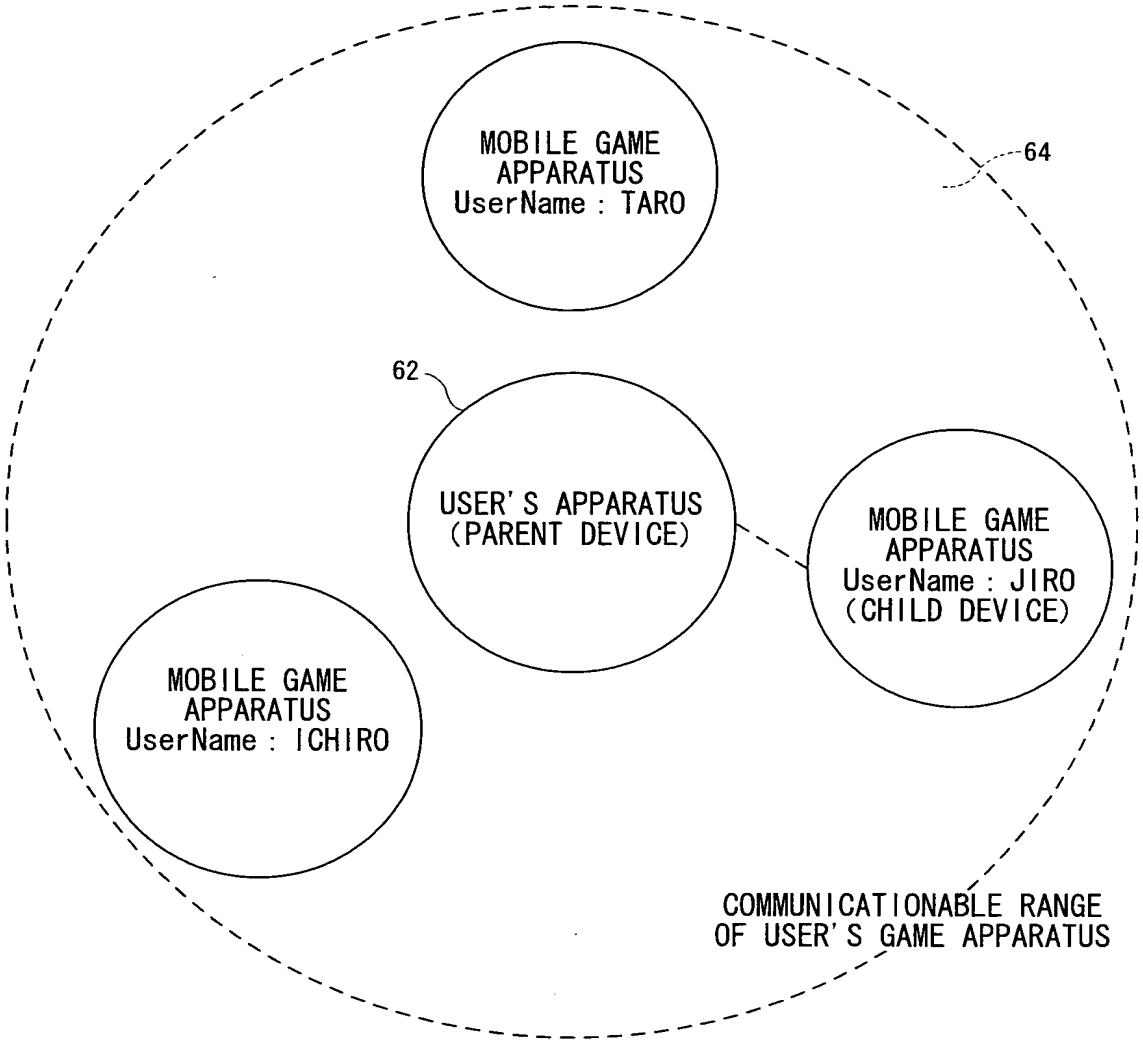

MOBILE GAME APPARATUS UserName : TARO
64
62
USER'S APPARATUS (PARENT DEVICE)
MOBILE GAME APPARATUS UserName : JIRO (CHILD DEVICE)
MOBILE GAME APPARATUS UserName : ICHIRO
COMMUNICATIONABLE RANGE OF USER'S GAME APPARATUS

FIG. 6

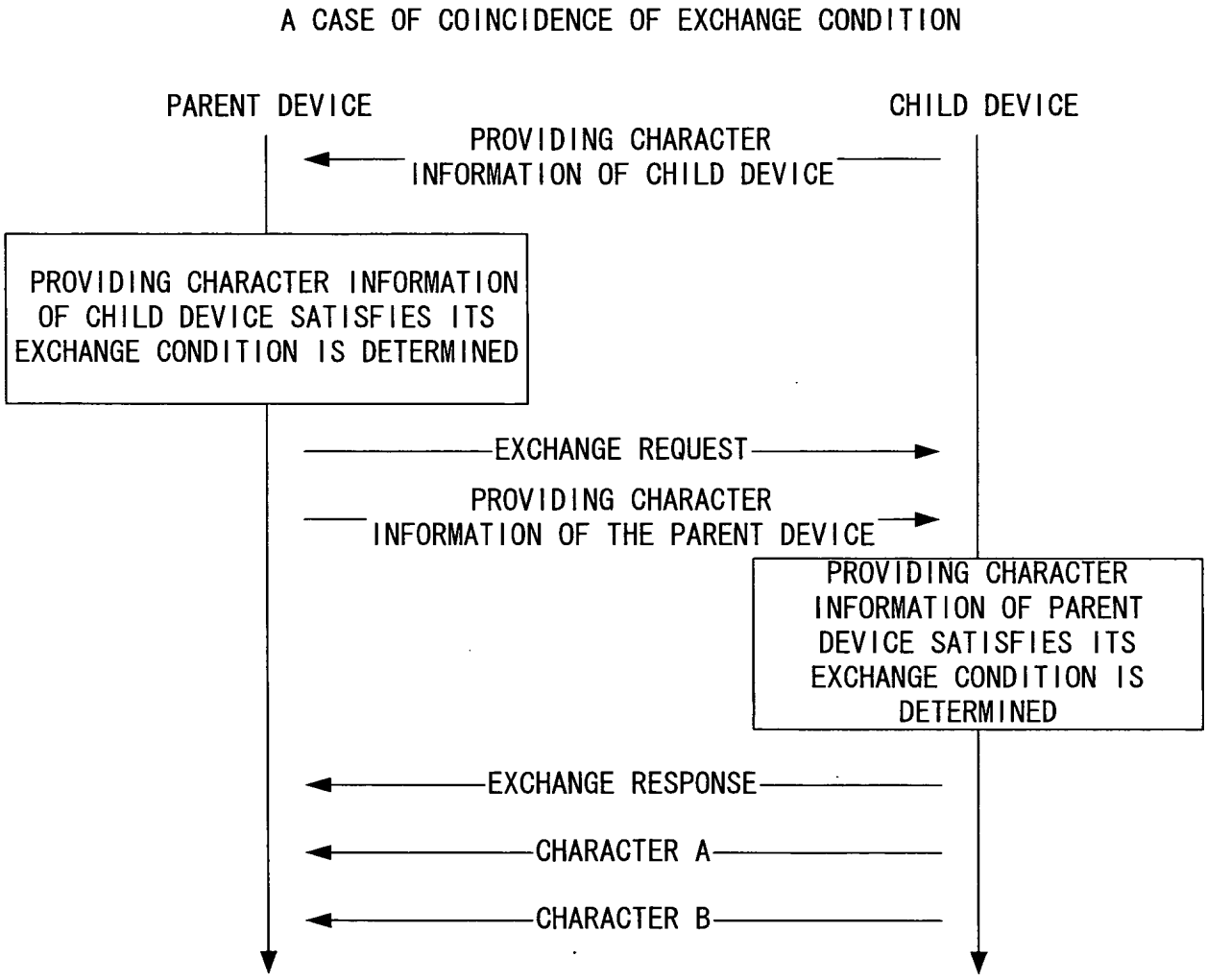

A CASE OF COINCIDENCE OF EXCHANGE CONDITION
PARENT DEVICE
CHILD DEVICE
PROVIDING CHARACTER INFORMATION OF CHILD DEVICE
PROVIDING CHARACTER INFORMATION OF CHILD DEVICE SATISFIES ITS EXCHANGE CONDITION IS DETERMINED
EXCHANGE REQUEST
PROVIDING CHARACTER INFORMATION OF THE PARENT DEVICE
PROVIDING CHARACTER INFORMATION OF PARENT DEVICE SATISFIES ITS EXCHANGE CONDITION IS DETERMINED
EXCHANGE RESPONSE
CHARACTER A
CHARACTER B

FIG. 7

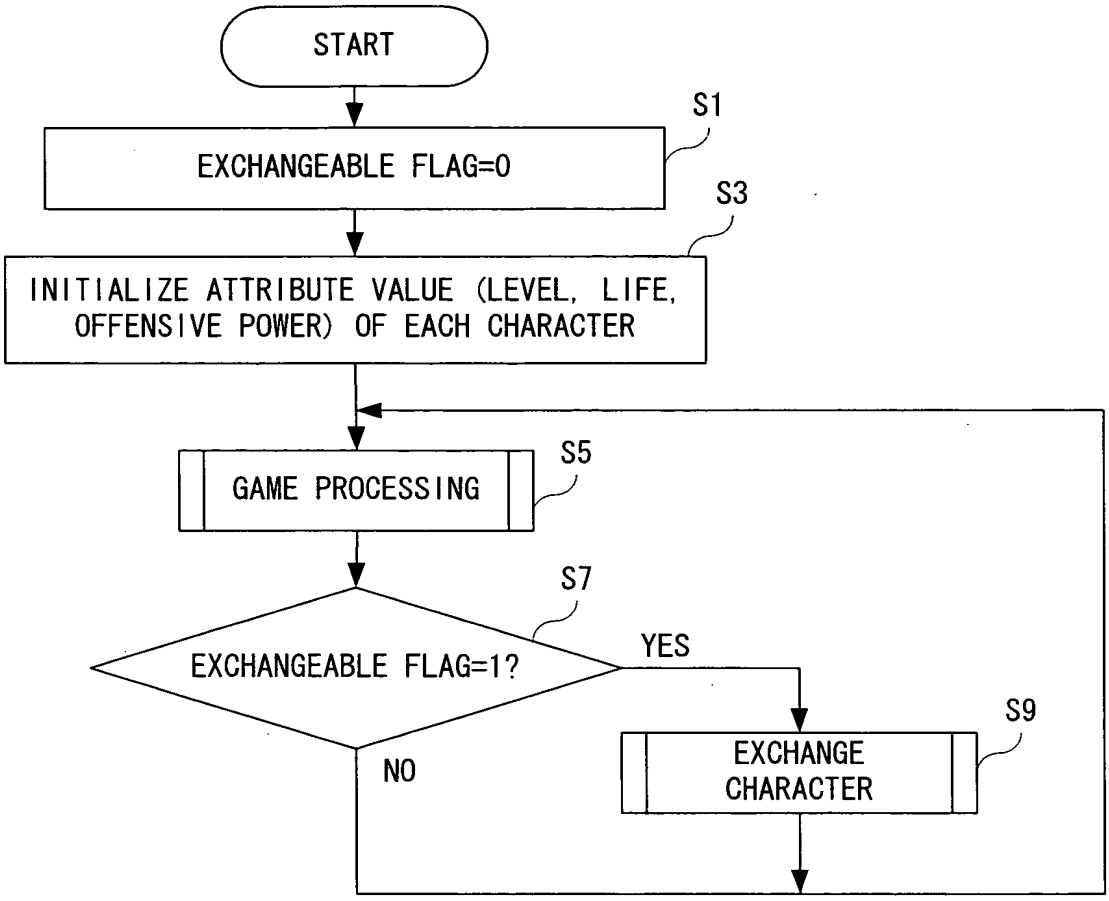

START
S1
EXCHANGEABLE FLAG=0
S3
INITIALIZE ATTRIBUTE VALUE (LEVEL, LIFE, OFFENSIVE POWER) OF EACH CHARACTER
S5
GAME PROCESSING
S7
EXCHANGEABLE FLAG=1?
YES
NO
S9
EXCHANGE CHARACTER

FIG. 8

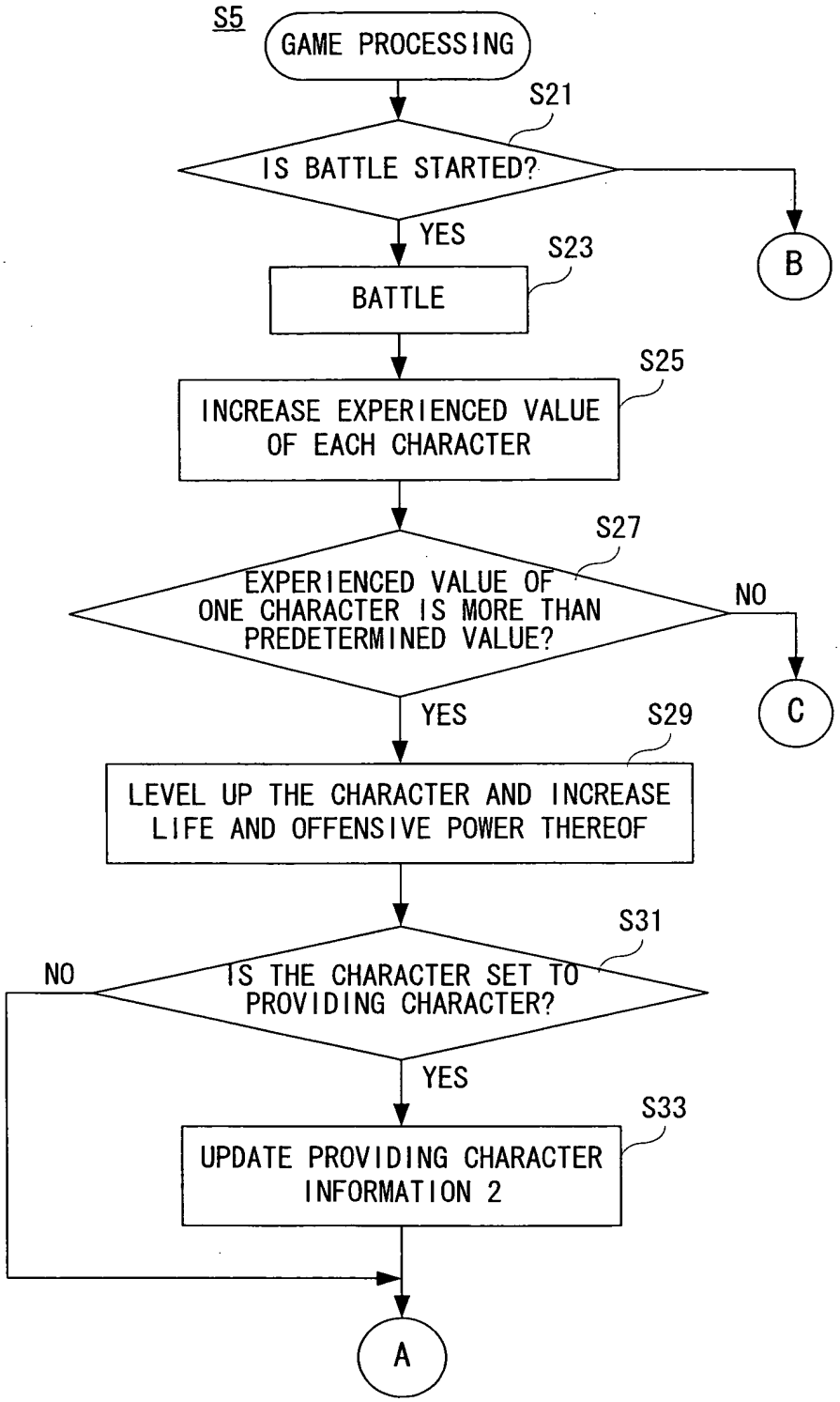

S5
GAME PROCESSING
S21
IS BATTLE STARTED?
YES
NO
B
S23
BATTLE
S25
INCREASE EXPERIENCED VALUE OF EACH CHARACTER
S27
EXPERIENCED VALUE OF ONE CHARACTER IS MORE THAN PREDETERMINED VALUE?
NO
C
YES
S29
LEVEL UP THE CHARACTER AND INCREASE LIFE AND OFFENSIVE POWER THEREOF
S31
NO
IS THE CHARACTER SET TO PROVIDING CHARACTER?
YES
S33
UPDATE PROVIDING CHARACTER INFORMATION 2
A

FIG. 9

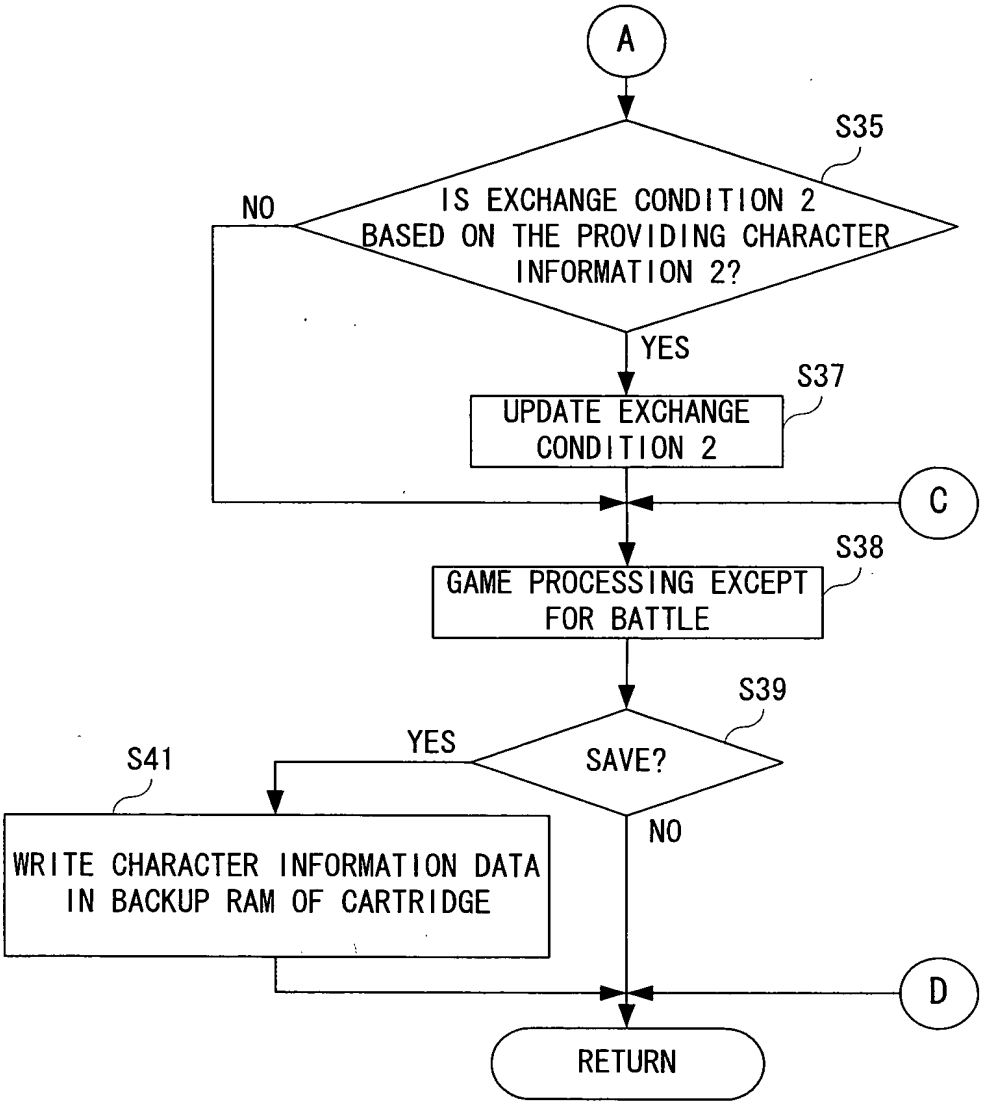

A
S35
IS EXCHANGE CONDITION 2 BASED ON THE PROVIDING CHARACTER INFORMATION 2?
NO
YES
S37
UPDATE EXCHANGE CONDITION 2
C
S38
GAME PROCESSING EXCEPT FOR BATTLE
S39
SAVE?
YES
NO
S41
WRITE CHARACTER INFORMATION DATA IN BACKUP RAM OF CARTRIDGE
D
RETURN

FIG. 10

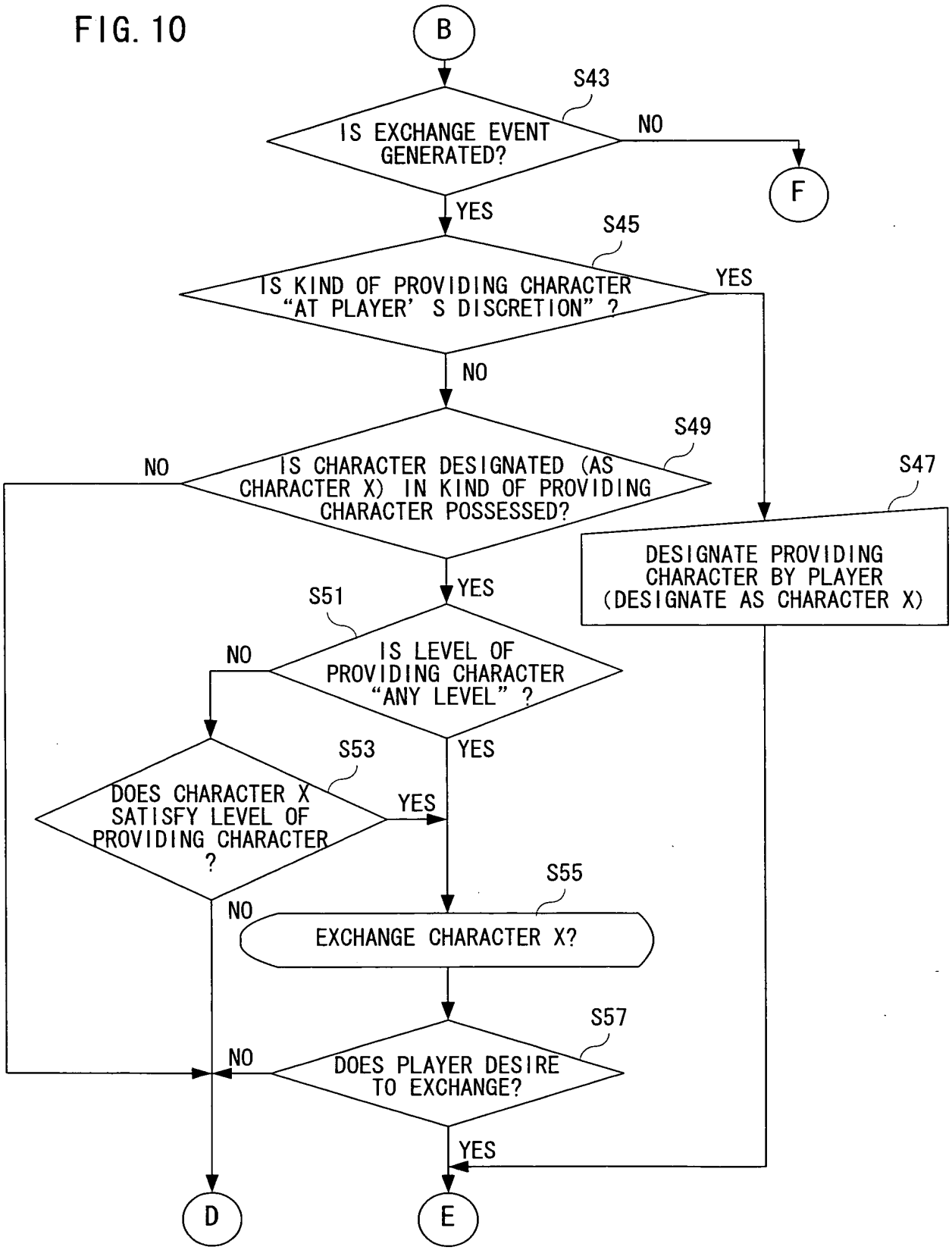

B
S43
IS EXCHANGE EVENT GENERATED?
NO
F
YES
S45
IS KIND OF PROVIDING CHARACTER "AT PLAYER' S DISCRETION" ?
YES
NO
S49
NO
IS CHARACTER DESIGNATED (AS CHARACTER X) IN KIND OF PROVIDING CHARACTER POSSESSED?
S47
DESIGNATE PROVIDING CHARACTER BY PLAYER (DESIGNATE AS CHARACTER X)
YES
S51
IS LEVEL OF PROVIDING CHARACTER "ANY LEVEL" ?
NO
YES
S53
DOES CHARACTER X SATISFY LEVEL OF PROVIDING CHARACTER ?
YES
S55
NO
EXCHANGE CHARACTER X?
S57
NO
DOES PLAYER DESIRE TO EXCHANGE?
YES
D
E

FIG. 11

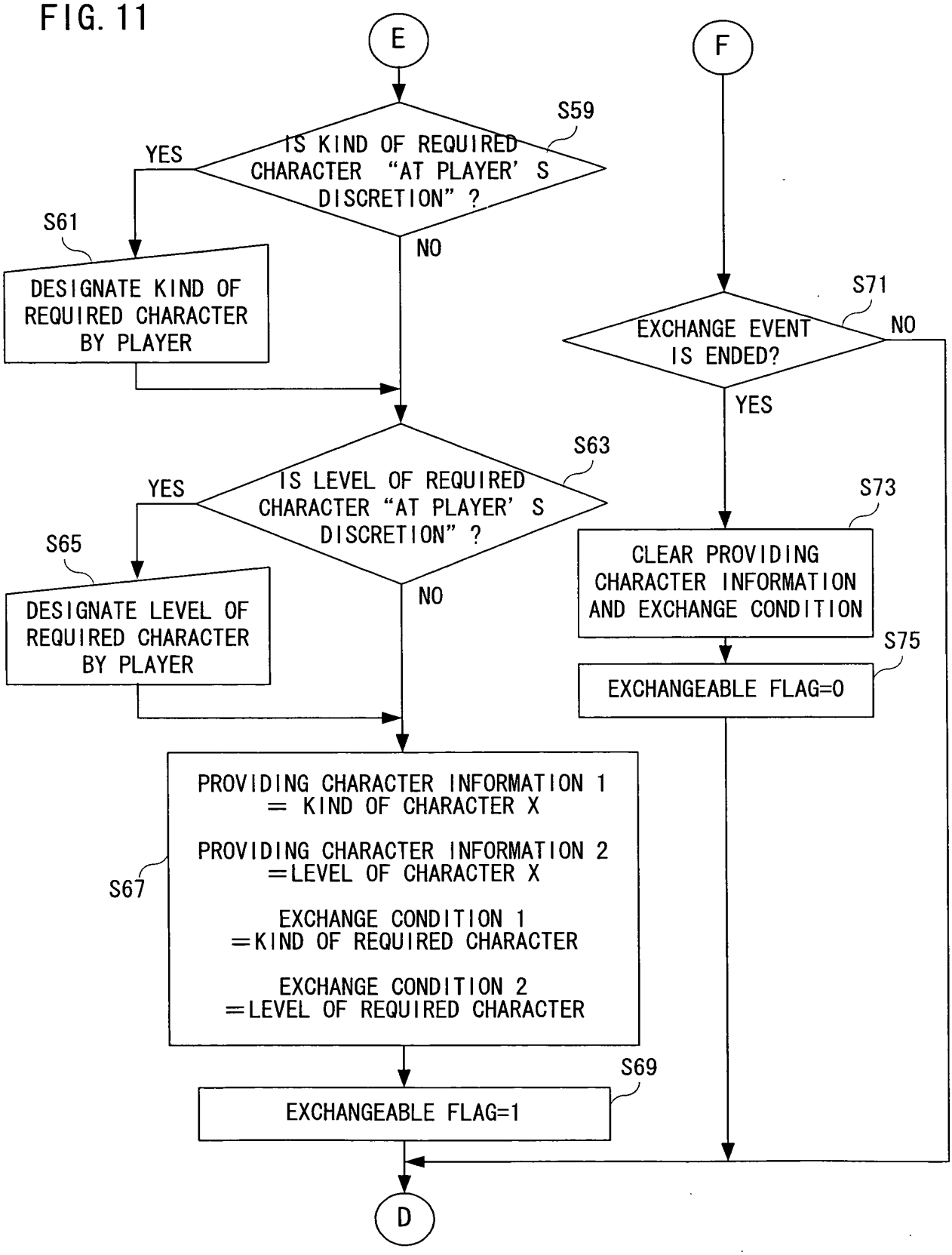

E
F
S59
IS KIND OF REQUIRED CHARACTER "AT PLAYER' S DISCRETION" ?
YES
NO
S61
DESIGNATE KIND OF REQUIRED CHARACTER BY PLAYER
S71
EXCHANGE EVENT IS ENDED?
NO
YES
S63
IS LEVEL OF REQUIRED CHARACTER "AT PLAYER' S DISCRETION" ?
YES
NO
S65
DESIGNATE LEVEL OF REQUIRED CHARACTER BY PLAYER
S73
CLEAR PROVIDING CHARACTER INFORMATION AND EXCHANGE CONDITION
S75
EXCHANGEABLE FLAG=0
S67
PROVIDING CHARACTER INFORMATION 1 = KIND OF CHARACTER X
PROVIDING CHARACTER INFORMATION 2 =LEVEL OF CHARACTER X
EXCHANGE CONDITION 1 =KIND OF REQUIRED CHARACTER
EXCHANGE CONDITION 2 =LEVEL OF REQUIRED CHARACTER
S69
EXCHANGEABLE FLAG=1
D

FIG. 12

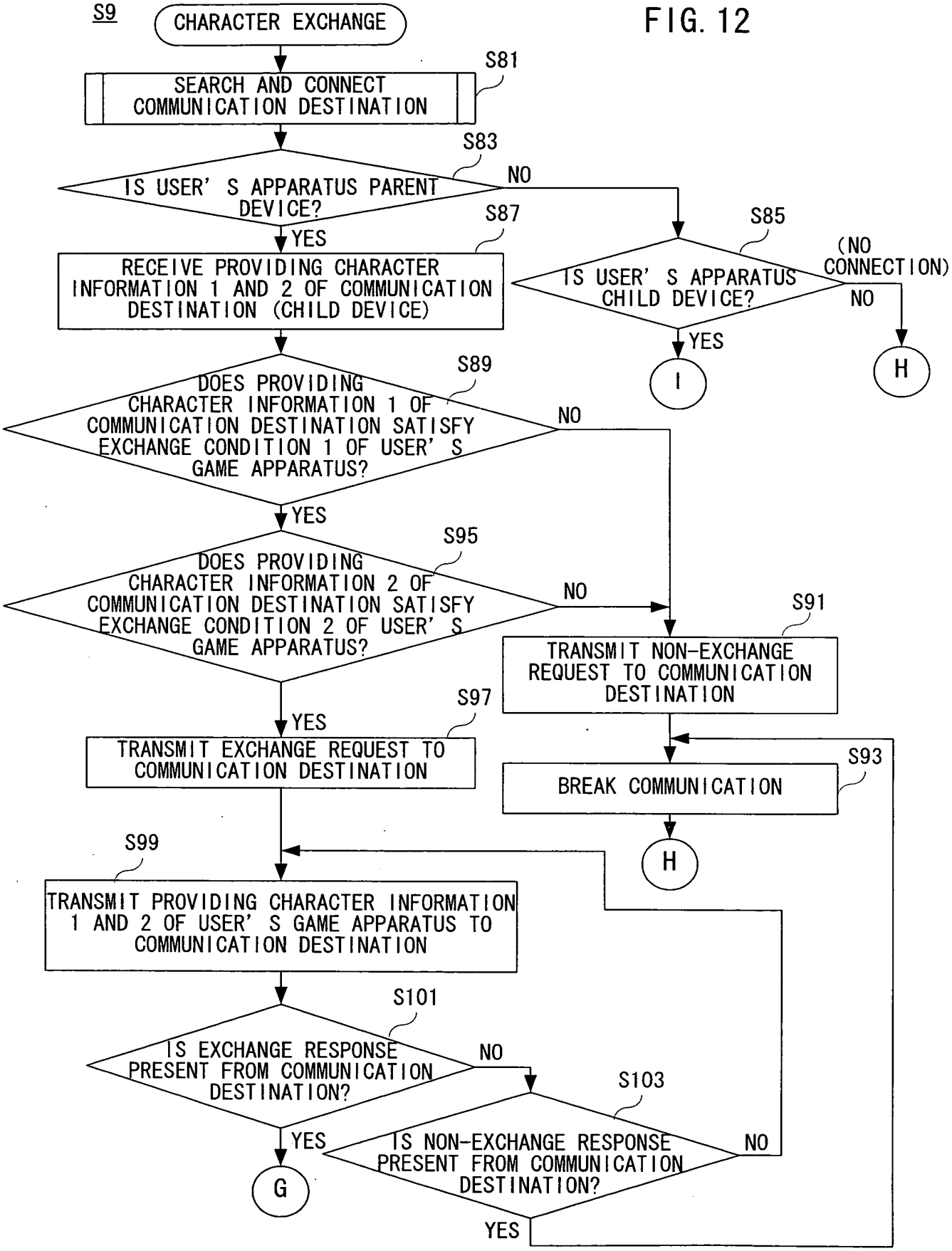

S9
CHARACTER EXCHANGE
S81
SEARCH AND CONNECT COMMUNICATION DESTINATION
S83
IS USER' S APPARATUS PARENT DEVICE?
NO
YES
S87
RECEIVE PROVIDING CHARACTER INFORMATION 1 AND 2 OF COMMUNICATION DESTINATION (CHILD DEVICE)
S85
IS USER' S APPARATUS CHILD DEVICE?
(NO CONNECTION)
NO
YES
I
H
S89
DOES PROVIDING CHARACTER INFORMATION 1 OF COMMUNICATION DESTINATION SATISFY EXCHANGE CONDITION 1 OF USER' S GAME APPARATUS?
NO
YES
S95
DOES PROVIDING CHARACTER INFORMATION 2 OF COMMUNICATION DESTINATION SATISFY EXCHANGE CONDITION 2 OF USER' S GAME APPARATUS?
NO
YES
S91
TRANSMIT NON-EXCHANGE REQUEST TO COMMUNICATION DESTINATION
S97
TRANSMIT EXCHANGE REQUEST TO COMMUNICATION DESTINATION
S93
BREAK COMMUNICATION
H
S99
TRANSMIT PROVIDING CHARACTER INFORMATION 1 AND 2 OF USER' S GAME APPARATUS TO COMMUNICATION DESTINATION
S101
IS EXCHANGE RESPONSE PRESENT FROM COMMUNICATION DESTINATION?
NO
YES
G
S103
IS NON-EXCHANGE RESPONSE PRESENT FROM COMMUNICATION DESTINATION?
NO
YES

FIG. 13

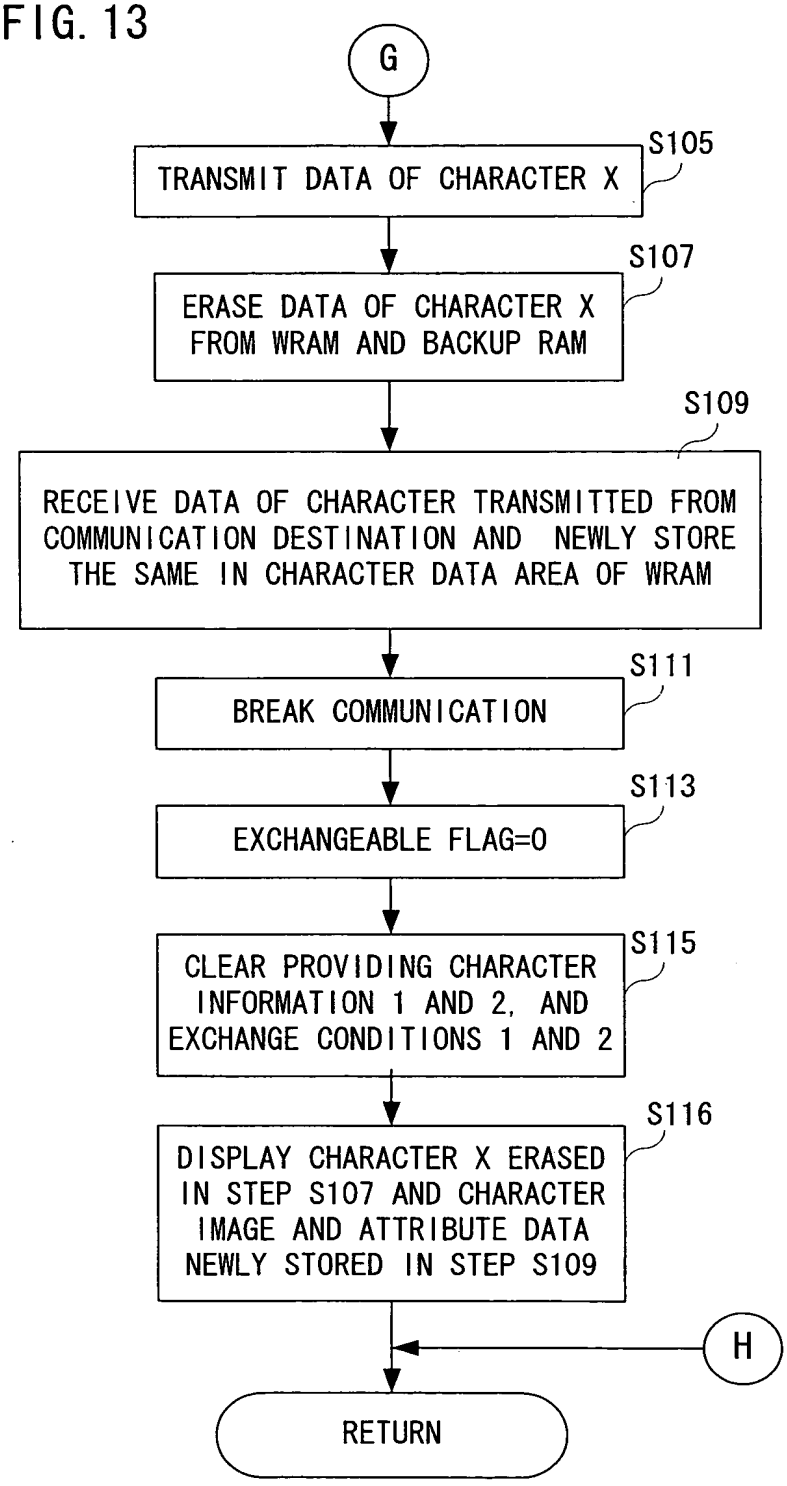

G
S105
TRANSMIT DATA OF CHARACTER X
S107
ERASE DATA OF CHARACTER X FROM WRAM AND BACKUP RAM
S109
RECEIVE DATA OF CHARACTER TRANSMITTED FROM COMMUNICATION DESTINATION AND NEWLY STORE THE SAME IN CHARACTER DATA AREA OF WRAM
S111
BREAK COMMUNICATION
S113
EXCHANGEABLE FLAG=0
S115
CLEAR PROVIDING CHARACTER INFORMATION 1 AND 2, AND EXCHANGE CONDITIONS 1 AND 2
S116
DISPLAY CHARACTER X ERASED IN STEP S107 AND CHARACTER IMAGE AND ATTRIBUTE DATA NEWLY STORED IN STEP S109
H
RETURN

FIG. 14

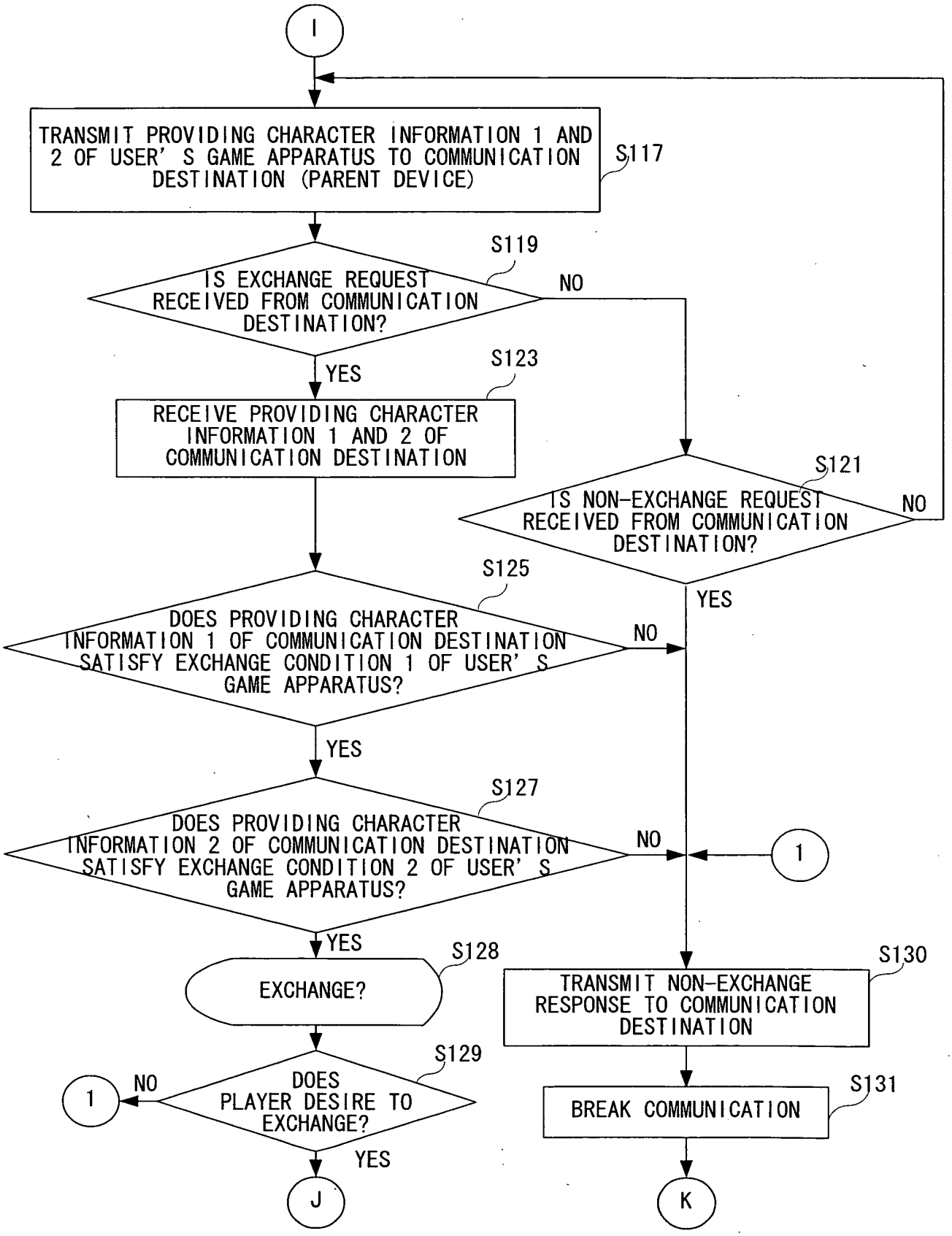

I
TRANSMIT PROVIDING CHARACTER INFORMATION 1 AND 2 OF USER'S GAME APPARATUS TO COMMUNICATION DESTINATION (PARENT DEVICE)
S117
S119
IS EXCHANGE REQUEST RECEIVED FROM COMMUNICATION DESTINATION?
NO
YES
S123
RECEIVE PROVIDING CHARACTER INFORMATION 1 AND 2 OF COMMUNICATION DESTINATION
S121
IS NON-EXCHANGE REQUEST RECEIVED FROM COMMUNICATION DESTINATION?
NO
YES
S125
DOES PROVIDING CHARACTER INFORMATION 1 OF COMMUNICATION DESTINATION SATISFY EXCHANGE CONDITION 1 OF USER'S GAME APPARATUS?
NO
YES
S127
DOES PROVIDING CHARACTER INFORMATION 2 OF COMMUNICATION DESTINATION SATISFY EXCHANGE CONDITION 2 OF USER'S GAME APPARATUS?
NO
1
YES
S128
EXCHANGE?
S129
DOES PLAYER DESIRE TO EXCHANGE?
NO
1
YES
J
S130
TRANSMIT NON-EXCHANGE RESPONSE TO COMMUNICATION DESTINATION
S131
BREAK COMMUNICATION
K

FIG. 15

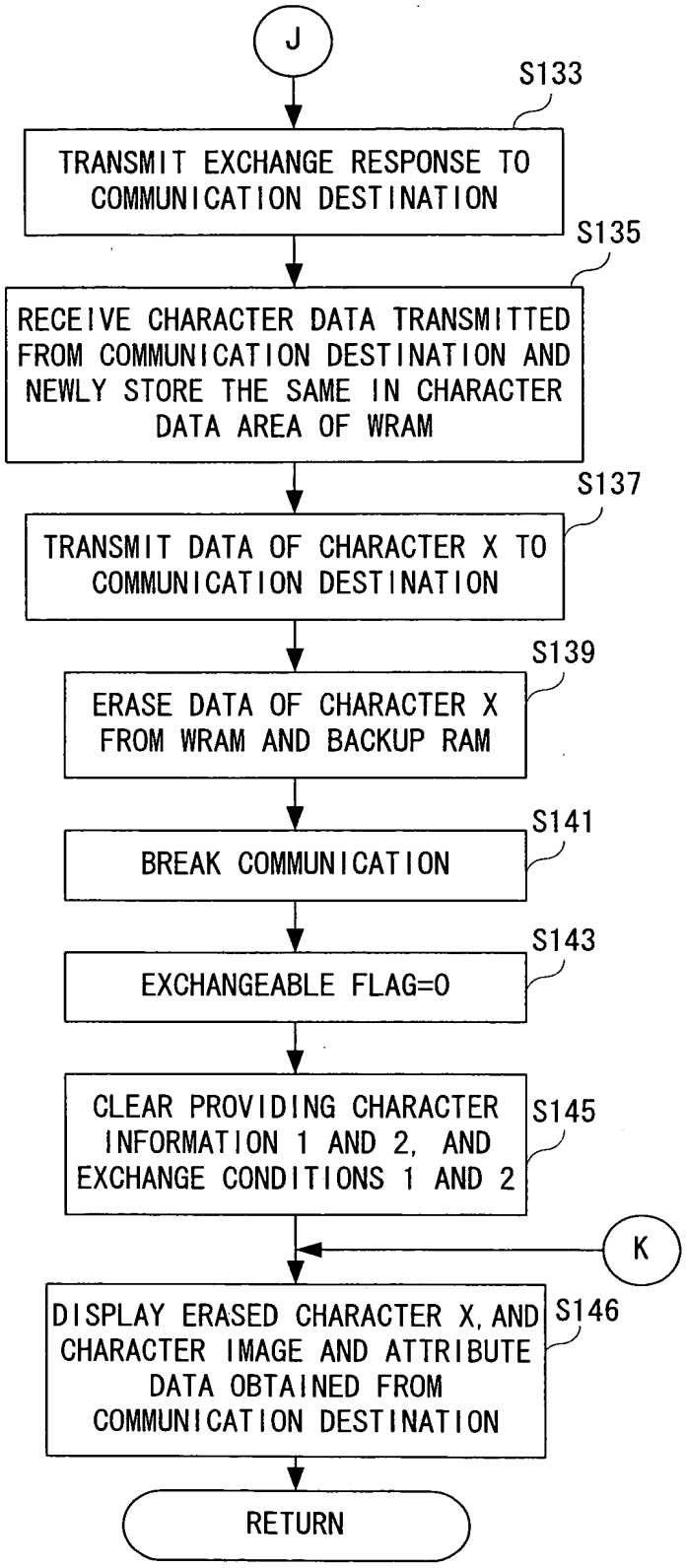
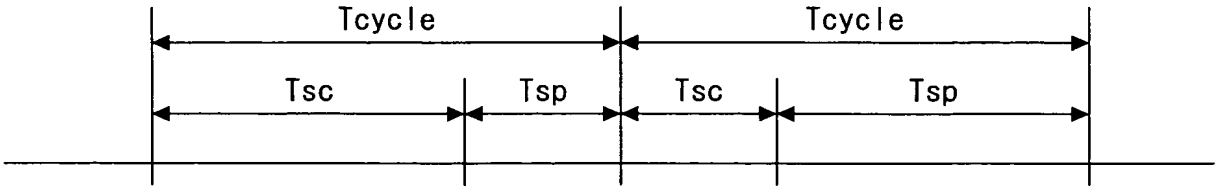

J
S133
TRANSMIT EXCHANGE RESPONSE TO COMMUNICATION DESTINATION
S135
RECEIVE CHARACTER DATA TRANSMITTED FROM COMMUNICATION DESTINATION AND NEWLY STORE THE SAME IN CHARACTER DATA AREA OF WRAM
S137
TRANSMIT DATA OF CHARACTER X TO COMMUNICATION DESTINATION
S139
ERASE DATA OF CHARACTER X FROM WRAM AND BACKUP RAM
S141
BREAK COMMUNICATION
S143
EXCHANGEABLE FLAG=0
S145
CLEAR PROVIDING CHARACTER INFORMATION 1 AND 2, AND EXCHANGE CONDITIONS 1 AND 2
K
S146
DISPLAY ERASED CHARACTER X, AND CHARACTER IMAGE AND ATTRIBUTE DATA OBTAINED FROM COMMUNICATION DESTINATION
RETURN

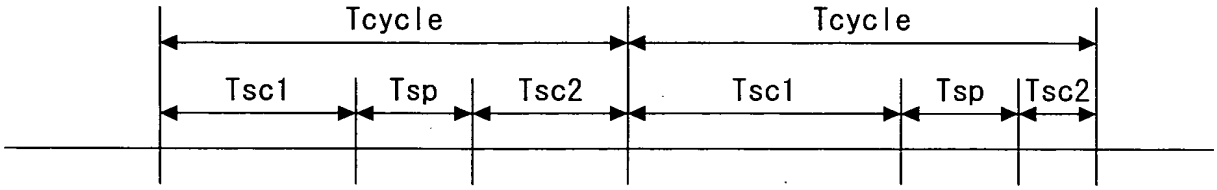
FIG. 16

(A) CASE OF SEARCHING AND CONNECTING COMMUNICATION DESTINATION 1



Tcycle IS FIXED VALUE OF 4 SECONDS, FOR EXAMPLE
Tsc IS RANDOM VALUE OF FROM 0 TO Tcycle
Tsp IS Tcycle-Tsc

(B) CASE OF SEARCHING AND CONNECTING COMMUNICATION DESTINATION 2



Tcycle IS FIXED VALUE OF 4 SECONDS, FOR EXAMPLE
Tsp IS FIXED VALUE OF 96 msec FOR EXAMPLE
Tsc1 IS RANDOM VALUE OF FROM 0 TO (Tcycle-Tsp)
Tsc2 IS Tcycle-Tsc1-Tsp

FIG. 17 (A) PARENT DEVICE PACKET (BRAODCASTING DATA)

sync	PID	User Name	Eflag	Payload

(B) CHILD DEVICE PACKET (CONNECTION REQUESTING DATA)

CID	User Name	Payload

FIG. 18

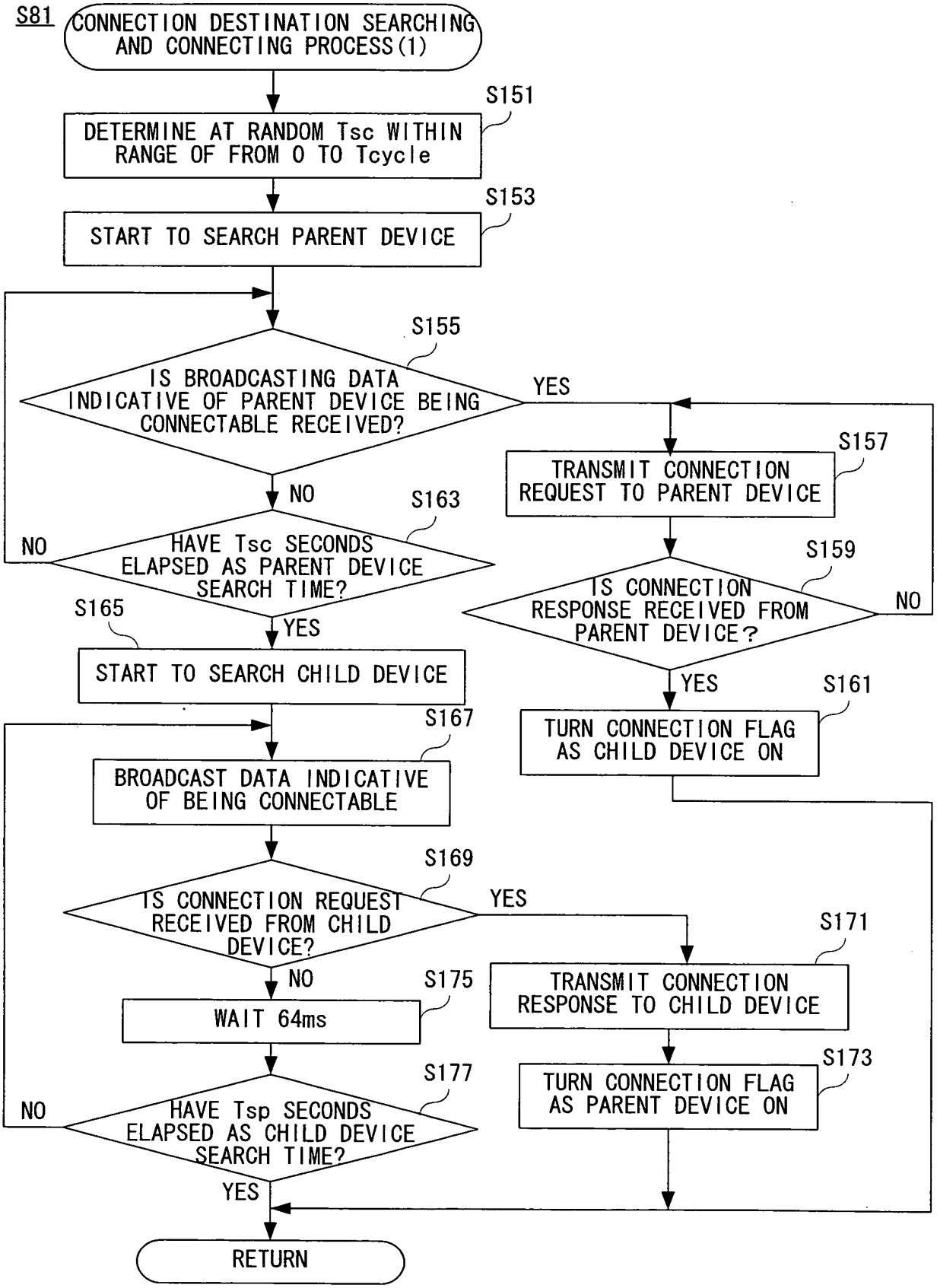

S81
CONNECTION DESTINATION SEARCHING AND CONNECTING PROCESS(1)
S151
DETERMINE AT RANDOM Tsc WITHIN RANGE OF FROM 0 TO Tcycle
S153
START TO SEARCH PARENT DEVICE
S155
IS BROADCASTING DATA INDICATIVE OF PARENT DEVICE BEING CONNECTABLE RECEIVED?
YES
NO
S157
TRANSMIT CONNECTION REQUEST TO PARENT DEVICE
S159
IS CONNECTION RESPONSE RECEIVED FROM PARENT DEVICE?
NO
YES
S161
TURN CONNECTION FLAG AS CHILD DEVICE ON
S163
HAVE Tsc SECONDS ELAPSED AS PARENT DEVICE SEARCH TIME?
NO
YES
S165
START TO SEARCH CHILD DEVICE
S167
BROADCAST DATA INDICATIVE OF BEING CONNECTABLE
S169
IS CONNECTION REQUEST RECEIVED FROM CHILD DEVICE?
YES
NO
S171
TRANSMIT CONNECTION RESPONSE TO CHILD DEVICE
S173
TURN CONNECTION FLAG AS PARENT DEVICE ON
S175
WAIT 64ms
S177
HAVE Tsp SECONDS ELAPSED AS CHILD DEVICE SEARCH TIME?
NO
YES
RETURN

FIG. 19

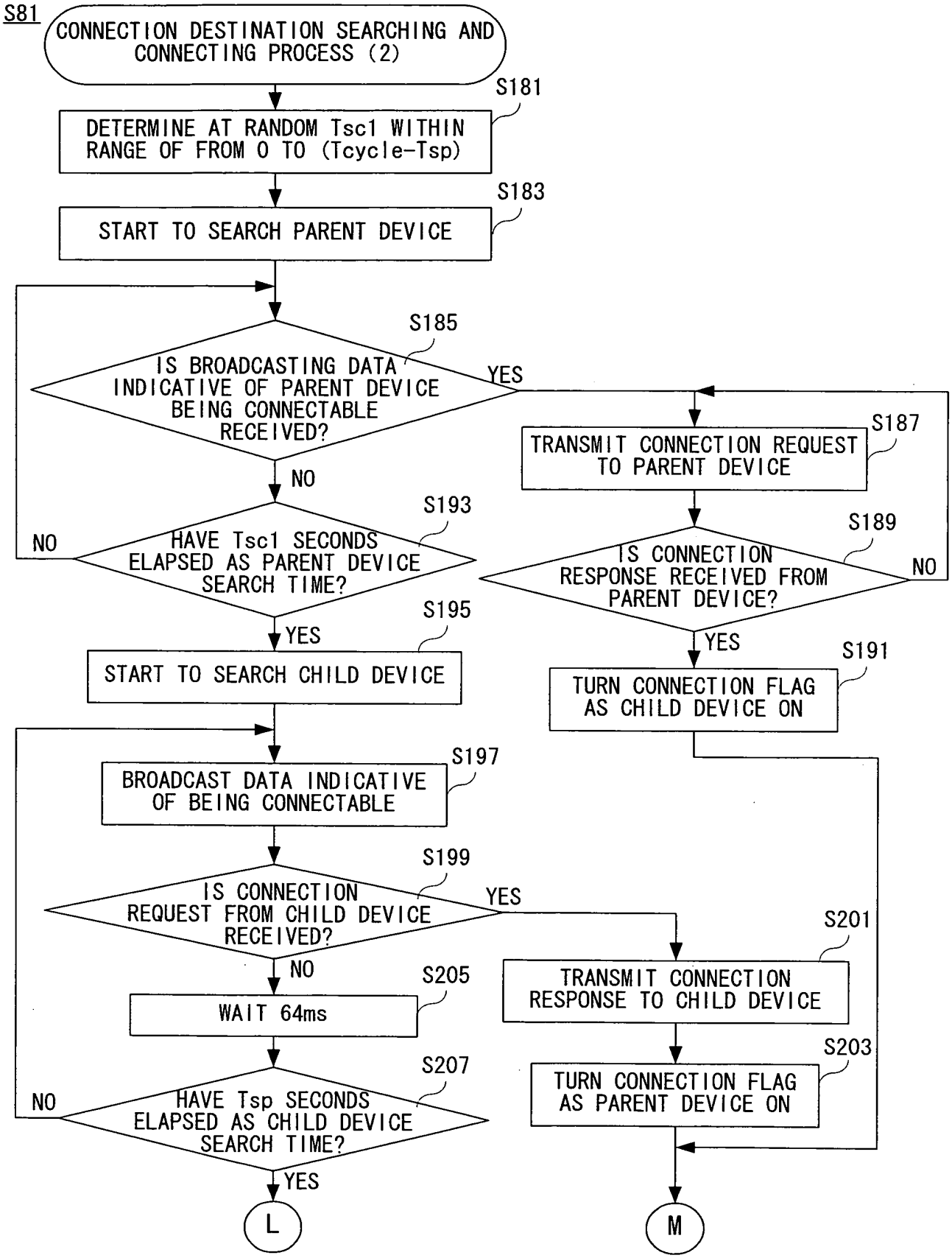
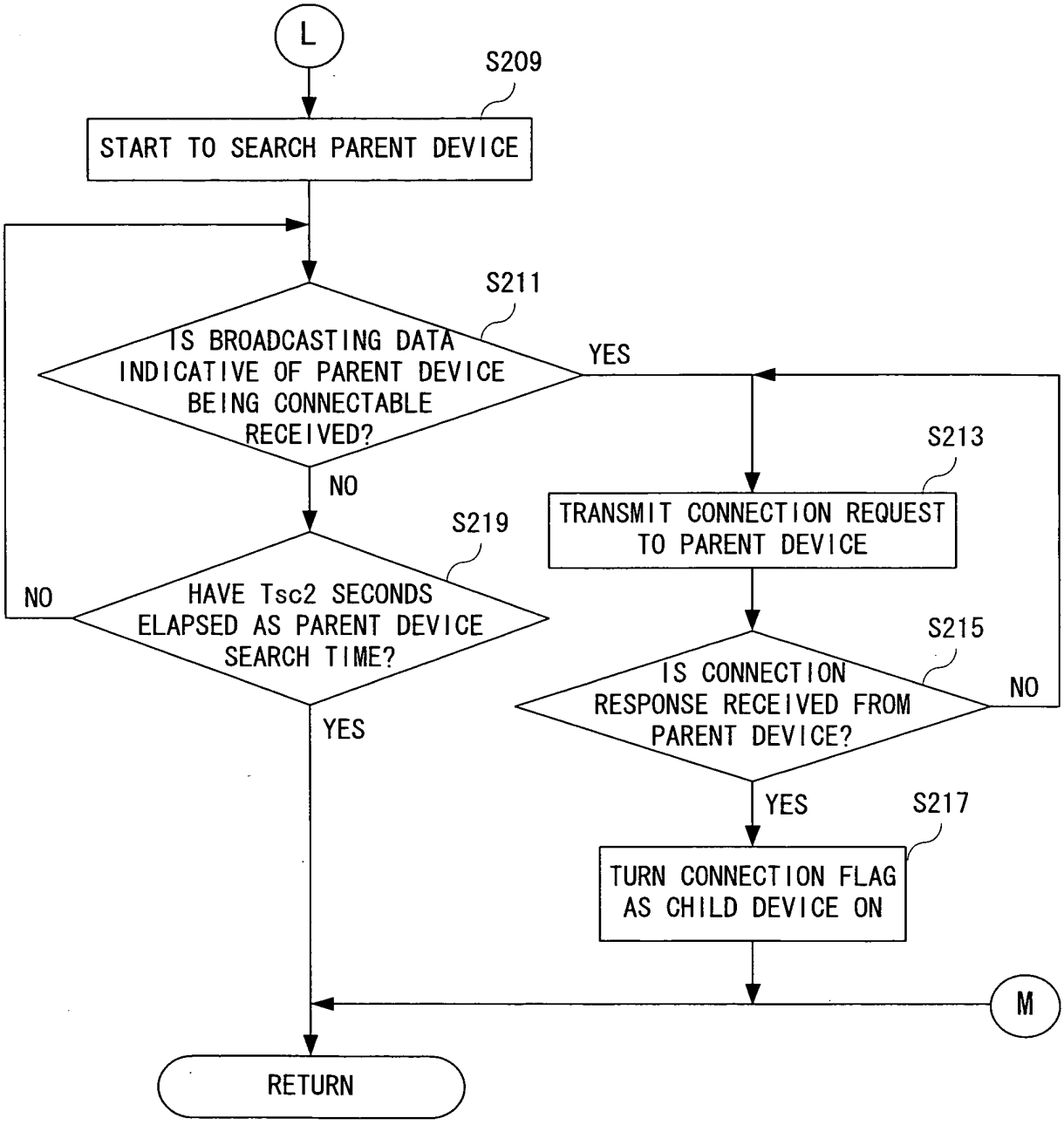

S81
CONNECTION DESTINATION SEARCHING AND CONNECTING PROCESS (2)
S181
DETERMINE AT RANDOM Tsc1 WITHIN RANGE OF FROM 0 TO (Tcycle-Tsp)
S183
START TO SEARCH PARENT DEVICE
S185
IS BROADCASTING DATA INDICATIVE OF PARENT DEVICE BEING CONNECTABLE RECEIVED?
YES
NO
S193
HAVE Tsc1 SECONDS ELAPSED AS PARENT DEVICE SEARCH TIME?
NO
YES
S195
START TO SEARCH CHILD DEVICE
S187
TRANSMIT CONNECTION REQUEST TO PARENT DEVICE
S189
IS CONNECTION RESPONSE RECEIVED FROM PARENT DEVICE?
NO
YES
S191
TURN CONNECTION FLAG AS CHILD DEVICE ON
S197
BROADCAST DATA INDICATIVE OF BEING CONNECTABLE
S199
IS CONNECTION REQUEST FROM CHILD DEVICE RECEIVED?
YES
NO
S205
WAIT 64ms
S207
HAVE Tsp SECONDS ELAPSED AS CHILD DEVICE SEARCH TIME?
NO
YES
L
S201
TRANSMIT CONNECTION RESPONSE TO CHILD DEVICE
S203
TURN CONNECTION FLAG AS PARENT DEVICE ON
M

FIG. 20


L
S209
START TO SEARCH PARENT DEVICE
S211
IS BROADCASTING DATA INDICATIVE OF PARENT DEVICE BEING CONNECTABLE RECEIVED?
YES
NO
S213
TRANSMIT CONNECTION REQUEST TO PARENT DEVICE
S219
HAVE Tsc2 SECONDS ELAPSED AS PARENT DEVICE SEARCH TIME?
NO
YES
S215
IS CONNECTION RESPONSE RECEIVED FROM PARENT DEVICE?
NO
YES
S217
TURN CONNECTION FLAG AS CHILD DEVICE ON
M
RETURN